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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/535,836 03/28/00 OHTANI

H SEL 173

EXAMINER

MMC2/0705

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ART UNIT	PAPER NUMBER
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2811
DATE MAILED:

07/05/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p>09/535,836</p>	<p>Applicant(s)</p> <p>OHTANI ET AL.</p>	
	<p>Examiner</p> <p>Hung K. Vu</p>	<p>Art Unit</p> <p>2811</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 13-18 and 25-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 19-24 and 28-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- | | |
|--|--|
| 15) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6, 7</u> . | 20) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Invention of Group I, Claims 1-12 and 19-24, in Paper No. 9 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Applicant's election without traverse of Invention of Group I, Claims 1-12 and 19-24, in Paper No. 9 is acknowledged.

Claims 13-18 and 25-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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Claims 1, 3-5, 7, 9-11, 19, 21-23, 28 and 30-32 are rejected under 35 U.S.C. 102(a) as being anticipated by Yamazaki (PN 5,990,542).

Yamazaki discloses a semiconductor device comprising,

A thin film transistor formed over a substrate (101), the thin film transistor having a semiconductor layer (103) and a gate electrode (105) adjacent to the semiconductor layer with a gate insulating film (104) interposed therebetween;

An inter-layer insulating film (116) comprising an organic material formed over the thin film transistor;

A first conductive layer (117) formed on the inter-layer insulating film;

A second conductive layer (121) formed on the first conductive layer,

Wherein the second conductive layer is connected to the semiconductor layer through a contact hole provided in the inter-layer insulating film. Note Figures 1A-4 of Yamazaki.

With regard to claims 3, 9, 21, and 30, Yamazaki discloses wherein the second metallic layer is selected from the group consisting of titanium and a material predominantly composed of titanium.

With regard to claims 4, 10, 22, and 31, Yamazaki discloses wherein the organic material is an organic-based resin material predominantly selected from the group consisting of polyimide, polyimide-amide, polyamide, acrylics, and BCB (benzocyclobutane).

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With regard to claims 5, 11, 23, and 32, Yamazaki discloses wherein the semiconductor device is selected from the group consisting of an active matrix liquid-crystal display device, an active matrix EL display device, and an active matrix EC display device.

4. Claims 1, 3-5, 7, 9-11, 19, 21-23, 28 and 30-32 are rejected under 35 U.S.C. 102(a) as being anticipated by Ohtani et al. (PN 5,923,962, of record).

Ohtani et al. discloses a semiconductor device comprising,

A thin film transistor formed over a substrate (201), the thin film transistor having a semiconductor layer (204) and a gate electrode (210) adjacent to the semiconductor layer with a gate insulating film (104) interposed therebetween;

An inter-layer insulating film (215) comprising an organic material formed over the thin film transistor;

A first conductive layer (216) formed on the inter-layer insulating film;

A second conductive layer (218) formed on the first conductive layer,

Wherein the second conductive layer is connected to the semiconductor layer through a contact hole provided in the inter-layer insulating film. Note Figures 10A-10F of Ohtani et al..

With regard to claims 3, 9, 21, and 30, Ohtani et al. discloses wherein the second metallic layer is selected from the group consisting of titanium and a material predominantly composed of titanium.

With regard to claims 4, 10, 22, and 31, Ohtani et al. discloses wherein the organic material is an organic-based resin material predominantly selected from the group consisting of polyimide, polyimide-amide, polyamide, acrylics, and BCB (benzocyclobutane).

With regard to claims 5, 11, 23, and 32, Ohtani et al. discloses wherein the semiconductor device is selected from the group consisting of an active matrix liquid-crystal display device, an active matrix EL display device, and an active matrix EC display device.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12, 19-24, and 28-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon (PN 5,977,580) in view of Yamazaki (PN 5,990,542).

Yoon discloses a semiconductor device comprising,

A thin film transistor formed over a substrate (100), the thin film transistor having a semiconductor layer (106) and a gate layer electrode (108) adjacent to the semiconductor layer with a gate insulating film interposed therebetween;

An inter-layer insulating film (110) formed over the thin film transistor;

A first conductive layer (upper 106a) formed on the inter-layer insulating film;

A second conductive layer (118) formed on the first conductive layer,

Wherein the second conductive layer is connected to the semiconductor layer through a contact hole provided in the first conductive layer and the inter-layer insulating film. Note Figures 3-4E of Yoon.

Yoon discloses all of the claimed limitations except the inter-layer insulating film comprising an organic material. However, Yamazaki discloses a semiconductor device comprising an inter-layer insulating film (116) comprising an organic material (polyimide resin or acrylic resin). Note Figures 1A-4 of Yamazaki. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the inter-layer insulating film of Yoon's comprising an organic material, such as taught by Yamazaki in order to reduce the capacitance coupling between the conductive layers.

With regard to claims 2-3, 8-9, 20-21, 29-30, and 35-36, Yoon and Yamazaki disclose all of the claimed limitations except the material of the first conductive layer and the second conductive layer. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the first conductive layer and the second conductive layer of Yoon and Yamazaki's having the material as claimed because aluminum and titanium provide better conductivity.

With regard to claims 5, 11, 23, 32, and 38, Yoon and Yamazaki disclose wherein the semiconductor device is selected from the group consisting of an active matrix liquid-crystal display device, an active matrix EL display device, and an active matrix EC display device.

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With regard to claims 6, 12, 24, 33, and 39, Yoon and Yamazaki disclose all of the claimed limitations except the semiconductor device is selected from the group consisting of a video camera, a digital camera, a projector, a goggle-type display device, a car navigation device, a personal computer, and a portable information terminal. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the device of Yoon and Yamazaki into the group as claimed in order to provide a typical flat panel display.

6. Claims 2, 6, 8, 12, 20, 24, 29, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (PN 5,990,542).

With regard to claims 2, 8, 20, and 29, Yamazaki discloses all of the claimed limitations except the material of the first conductive layer is selected from the group consisting of aluminum and a material predominantly composed of aluminum. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the first conductive layer of Yamazaki's having the material selected from the group consisting of aluminum and a material predominantly composed of aluminum because aluminum provides better conductivity.

With regard to claims 6, 12, 24, and 32, Yamazaki discloses all of the claimed limitations except the semiconductor device is selected from the group consisting of a video camera, a digital camera, a projector, a goggle-type display device, a car navigation device, a personal computer, and a portable information terminal. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the device of Yamazaki's into the group as claimed in order to provide a typical flat panel display.

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Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung K. Vu whose telephone number is (703) 308-4079. The examiner can normally be reached on Mon-Thurs 7:00-5:30, Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Vu

June 30, 2001

Steven Loke
Primary Examiner

